======= WPI =======

TI - Starch-acrylonitrile[redacted]tyrene} highly hydrophilic ma[redacted]al - for use in paper napkins etc.

AB - J61095006 The material consists of an alkali saponified prod. of a graft-copolymer of a starch hydrolysate and acrylonitrile-styrene (molar ratio of acrylonitrile:styrene=99.9:0.1-91:9). Its prepn. comprises graft copolymerising a starch hydrolysate and acrylonitrile in the presence of styrene so that the range of molar ratio of acrylonitrile and styrene becomes 99.9:0.1-91:9, followed by subjecting the obtd. copolymer to alkali-saponification.

- In an example, a reaction vessel was charged with 10 pts. waxy corn starch and 127 pts. water. The mixt. was stirred at 95 deg.C for 30 mins. in nitrogen streams, to which were added 9.95 pts. (99.5 mol.%) acrylonitrile, 0.098 (0.5 mol.%) styrene, and 6.7 parts ammonium ceric nitrate soln. (in 1 N HNO3, cerium ion 0.1 mol./litre), then graft-polymerisation was allowed to proceed at 25 deg.C for 2 hrs. The reaction soln. was dehydrated, washed with water and dried under reduced pressure to obtain a starch-acrylonitrile-styrene graft-copolymer. Four parts the copolymer were plated in reaction vessel together with 200 pts. 1.0 N HCl and boiled for 2 hrs. The resultant was cooled, filtered, washed with water, dehydrated and dried. To 2 parts of the copolymer was added 20 pts. of 0.7 N aq. soln. of NaOH. The mixt. was pre-heated. When it became reddish brown, it was saponified at 100 deg.C for 2 hrs. After saponification, excess NaOH was neutralised with glacial acetic acid, to which was added methanol to allow the polymer to ppte. The ppte. were washed with methanol, and dispersed in water. The dispersion was conc. spread on a PTFE board and dried in air at 35 deg.C to obtain a film of alkali-saponified prod. (6pp Dwg.No.0/1)

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======= PAJ =======

TI - HIGHLY WATER-ABSORBING SUBSTANCE OF STARCH- ACRYLONITRILE-STYRENE SYSTEM AND ITS PRODUCTION

AB - PURPOSE:To obtain the titled substance useful as a water-retaining agent, etc., having extremely improved absorption ratio of aqueous solution containing a salt, and absorption ratio after heat treatment, by saponifying a graft copolymer of a starch hydrolyzate, and acrylonitrile-styrene in a specific molar ratio with an alkali.

- CONSTITUTION:For example, (A) 100pts.wt. starch hydrolyzate (e.g., amylose, etc.) having preferably <=1,000 polymerization degree and (B) preferably 100-300 pts.wt. mixture comprising (i) acrylonitrile and (ii) styrene in a molar ratio of 99.9:0.1-91:9 are subjected to graft polymerization by the use of preferably 1-100pts.wt. polymerization catalyst (preferably ammonium ceric nitrate, etc.). The prepared graft copolymer is saponified with 0.5-7.5N alkali preferably at 100-150 deg.C, to give the aimed substance.

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(54) HIGHLY WATER-ABSORBING SUBSTANCE OF STARCH-ACRYLONITRILE-STYRENE SYSTEM AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To obtain the titled substance useful as a water-retaining agent, etc., having extremely improved absorption ratio of aqueous solution containing a salt, and absorption ratio after heat treatment, by saponifying a graft copolymer of a starch hydrolyzate, and acrylonitrile-styrene in a specific molar ratio with an alkali.

CONSTITUTION: For example, (A) 100pts.wt. starch hydrolyzate (e.g., amylose, etc.) having preferably ≤1,000 polymerization degree and (B) preferably 100W300 pts.wt. mixture comprising (i) acrylonitrile and (ii) styrene in a molar ratio of 99.9:0.1W91:9 are subjected to graft polymerization by the use of preferably 1W100pts.wt. polymerization catalyst (preferably ammonium ceric nitrate, etc.). The prepared graft copolymer is saponified with 0.5W7.5N alkali preferably at 100W150°C, to give the aimed substance.

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